Transport Canada Transports Canada

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Marine Casualty Investigations

Enquêtes sur les accidents maritimes

Investigation Report to the Minister pursuant to sections 542 or 545 of the Canada Shipping Act

Rapport d'investigation au Ministre conformément aux articles 542 ou 545 de la Loi sur la marine marchande du Canada

Canada

Ce rapport est aussi disponible en français.

REPORT OF INVESTIGATION INTO THE CIRCUMSTANCES ATTENDING THE LOADING ASPECTS AND PRE-DEPARTURE CONDITION OF THE SOVIET FREIGHTER "KOMSOMOLETS KIRGIZII" WHICH DEPARTED FROM HALIFAX, N.S., MARCH 12, 1987 FOR HAVANA, CUBA

REPORT No. 480

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REPORT OF INVESTIGATION INTO THE CIRCUMSTANCES ATTENDING THE LOADING ASPECTS AND PRE-DEPARTURE CONDITION OF THE SOVIET FREIGHTER "KOMSOMOLETS KIRGIZII" WHICH DEPARTED FROM HALIFAX, N.S., MARCH 12, 1987 FOR HAVANA, CUBA

Particulars of Vessel

Name	"KOMSOMOLETS KIRGIZII"
Flag	USSR
Official Number	M-17133
Port of Registry	Leningrad
Call Sign	UTDW
Gross Tonnage	8,540
Net Tonnage	4,695
Length	147.35 m
Breadth	19.74 m
Depth	12.04 m
Draught (At Time of Departure)	8.70 m forward 9.00 m amidships 9.30 m aft
Built	1966 Turku/Abo, Finland
Type	General cargo freighter
Propulsion	Two-stroke, single-acting, 6 cylinder Sulzer diesel engine driving a single propeller and capable of attaining 9,000 b.h.p.
Crew	37
Owner	Baltic Shipping Company
Agent	Morflot Freightliners Ltd. Montreal, Quebec
Local Agents	I.H. Mathers & Son, Ltd. Halifax, N.S.

Navigating Equipment

Details not available to this investigation.

Vessel Description

This was a 5 hold, 5 hatch vessel with a total bale capacity of 16,866 cubic metres. The wheel-house/accommodation area was located between numbers 4 and 5 holds. Details of the configuration and location of underdeck tanks are not available to this investigation. Certificates on board were reportedly valid.

NOTE: 1. This report is confined to evidence obtained from persons who were involved with the loading and departure aspects of the vessel, so that these facts could be known and recorded. No attempt was made to obtain information concerning other aspects of the vessel, nor the circumstances of her loss as this is, more properly, the responsibility of the flag state. None of the survivors landed in Canada.

2. All times mentioned in this report are in Atlantic Standard Time (UTC minus four hours).

3. A Glossary of terms and abbreviations may be found following the Findings of this report.

Background

The Soviet vessel "KOMSOMOLETS KIRGIZII" departed from Leningrad, January 20, 1987, bound for Halifax, Nova Scotia, via Havana, Cuba.

She arrived at Halifax at 0230, February 26, 1987 and remained for approximately two weeks loading a consignment of bagged flour for Havana.

At 1315, March 11, the laden vessel departed her berth for an anchorage in Halifax Harbour and subsequently departed Halifax at 2037, March 12.

During the early hours of March 14, it was reported that the vessel was stopped on two occasions due to mechanical problems.

On the second occasion, it was reported that the vessel

fell beam on to the seas and developed a severe list.

It was apparently decided to abandon the vessel and all 37 of the crew were rescued by helicopter during the forenoon of March 14, being taken to Atlantic City, New Jersey. The vessel was reported to have sunk March 15 in approximate position 38°04'36"N, 70°09'00"W.

Narrative

The "KOMSOMOLETS KIRGIZII" arrived at Halifax, Nova Scotia, at 0230, February 26, 1987, and berthed at pier 20. The vessel was reportedly in ballast upon arrival and her deepest draught was 6 m aft. Loading of bagged flour commenced at 1330 the same day and continued throughout the ensuing two weeks, on normal working days, except for a 12 hour down-time period due to adverse weather.

A full cargo of 10,292 tonnes was loaded and, during her stay in port, approximately 250 tonnes of fresh water was taken aboard.

The vessel departed from pier 20 at 1315, March 11, and came to anchor at #2 anchorage in Halifax Harbour. Evidently, the master had received word from a Soviet weather station that weather conditions along the proposed track of the "KOMSOMOLETS KIRGIZII" were unfavourable. The master therefore elected to anchor his vessel until conditions improved.

The "KOMSOMOLETS KIRGIZII" left the anchorage at 2037, March 12, and at 2230 cleared the Halifax Harbour VTS zone.

At 0920, March 14, USCGRS Cape May responded to an auto alarm SOS transmitted on 500 kHz which originated from the "KOMSOMOLETS KIRGIZII", some 220 miles to the east, and which requested the evacuation of all personnel on board. The vessel reported having a port list of 28° in northerly winds of 25 to 30 knots and seas 6 to 8 metres high.

Helicopters from Elizabeth City, New Jersey, and Cape Cod, Massachusetts, and USCG vessel "TAMAROA" from Delaware Bay were dispatched to the vessel's position.

All crew members were evacuated by helicopter by 1355 and transported to Atlantic City.

The "KOMSOMOLETS KIRGIZII" was last observed by the "TAMAROA" as a radar target at approximately 0330, March 15, but by daybreak, the only visible evidence was an oil slick

and bags of flour floating on the surface and it was presumed that the "KOMSOMOLETS KIRGIZII" had sunk.

Analysis

1. The Vessel

It is not known how long the "KOMSOMOLETS KIRGIZII" had remained at Leningrad prior to departure January 20 but, evidently, extremely cold temperatures were experienced during the vessel's stay.

The "KOMSOMOLETS KIRGIZII" was reportedly subject to annual inspections and major quadrennial refit in accordance with the requirements of the USSR Register but no information was obtained as to when the latest inspection was carried out. According to information appearing on the vessel clearance certificate issued by Canada Customs, the "KOMSOMOLETS KIRGIZII" had valid certificates on board.

The general condition of the vessel and her cargo equipment was noted, by those who boarded her, to be better than that of most other vessels which have recently berthed at the flour loading dock in Halifax. The vessel had apparently been fitted with new horizontal side batten boards. No conditions were observed on board the vessel which would give rise to concern about her seaworthiness; in fact, typical of most of the Soviet commercial fleet, the vessel was stated to be a well found and well run vessel.

2. Bagged Cargo

The "KOMSOMOLETS KIRGIZII" was loaded with three different types of flour; Durum, Biscuit and Bakers. The first type is packed in light cotton material bags containing approximately 45.36 kg whilst the other two are packed in heavier material bags containing approximately 63.50 kg. (See Annex 1).

The cargo is shipped, either stowed with its 'one way net slings' or as 'ribbed cargo' which is a local term for loose bag stowage.

The net slings are lifted aboard the vessel, landed on the tines of a pusher/forklift truck and stowed as a unit. The ribs are loaded aboard on pallets. The forklift will then position the load and push the cargo off the pallet into the pre-determined stowage space.

The slings of flour are loaded four tiers high. First in the wings and ends and then across the square. Steel plates are then laid across the square to prevent damage to the under cargo, as the pushers are again used to complete the under-deck stow.

On the "KOMSOMOLETS KIRGIZII", numbers 1 and 5 holds are, in particular, subject to forward and after curvatures respectively. Consequently, extra longshoremen, known as levellers, were specifically employed in these two holds to fill in the gaps created by the symmetrically rectangular slings against the asymmetrical hull curvature.

In holds 1 to 4, wherever there was underdeck space remaining, it was reported to be no more than 45 cm (18 in) to the underside of the deck beams whilst in number 5 hold and 'tween-decks the cargo was reportedly stowed to the underside of the beams.

As the system of loading bagged flour in the port of Halifax is standard, the 45 cm space is not considered excessive and it is deemed impracticable to attempt to fill such a small area with cargo.

After the holds and 'tween-decks were filled, the hatchway trunks, some 2 m in depth, were reportedly, effectively filled to a height which would permit the proper closing of the hatch covers.

The total cargo loaded was 10,292 tonnes in a space of 16,866 cubic metres which gives a stowage factor of 0.610 tonnes/cu.m. Previous shipments in vessels of similar design indicate:

"KOMSOMOLETS KIRGIZII" ex Halifax July 20, 1979. 9,715 m/t = 0.576 tonnes/cu.m.

"KOMMUNARSK" ex Halifax March 25, 1986. 10,260 m/t = 0.608 tonnes/cu.m.

"KOMSOMOLETS UZBEKISTANA" ex Halifax February 18, 1987. 10,094 m/t = 0.598 tonnes/cu.m.

From these figures, it can be seen that the cargo aboard the "KOMSOMOLETS KIRGIZII" on her last trip had the best stow of all four shipments and thus, offered the least possibility of shifting.

There was no cargo survey by either the Canadian Coast Guard or by independent surveyors nor was any survey

considered necessary by the CCG or the vessel's agent.

The Stevedoring company which loaded the vessel has been involved with loading bagged flour for at least 42 years and to their recollection, this is the only vessel which had departed from Halifax with a full cargo of bagged flour and subsequently sustained a major casualty.

Transport Canada records from and including 1975 show that the loss of the "KOMSOMOLETS KIRGIZII" is the only such incident reported involving a vessel carrying a cargo of bagged flour which was loaded in Canada.

Upon completion of loading, the master signed a certificate of acceptance of the cargo, as stowed.

3. Departure information

A Canadian pilot boarded the "KOMSOMOLETS KIRGIZII" at 1230, March 11, 1987 at which time the vessel was berthed port side to and was observed to have a 2° list to port.

Tugs were secured fore and aft on the starboard side and it was reported that when they started to assist the vessel off the dock the port list remained.

The departure draughts were recorded as 8.70 m forward, 9.00 m amidships and 9.30 m aft.

The vessel departed from her berth at 1315 and proceeded to #2 anchorage, Halifax harbour where, at 1345, the vessel was brought up to 5 shackles of the port anchor cable in the water.

The vessel subsequently departed from the anchorage at 2037, March 12 under the conduct of a Canadian pilot. The after draught was observed to be 9.144 m (30 ft) and the vessel reportedly had a 2° list to port.

The pilotage both in and out of Halifax harbour was routine and no problems were encountered. The pilot disembarked at 2215 and the vessel proceeded to sea.

4. Other departure information

In addition to the cargo loaded, the vessel took on approximately 250 tonnes of fresh water during her stay at Halifax.

The "KOMSOMOLETS KIRGIZII" is documented as having a

fuel oil capacity of 1,942 tonnes whilst the Halifax departure deadweight distribution indicates the vessel sailed with 780 tonnes of fuel oil on board.

The mean departure draught of the vessel was 9.0 m and it was reported that the departure GM was 60 cm, indicating adequate initial statical stability. With a mean draught of 9.0 m, the main deck edge amidships would immerse at an angle of heel of approximately 17°. It was reported that at 0930, March 14, the "KOMSOMOLETS KIRGIZII" had a port list of 28° and it was later observed at about 0100, March 15, that the list had increased to approximately 40°. The vessel was presumed to have sunk at approximately 0600, March 15.

5. Weather

Marine forecasts issued daily by Environment Canada at 0045, 0600, 1130 and 1730, indicated that conditions in Canadian waters to the east and south of Nova Scotia, which would be transited by the "KOMSOMOLETS KIRGIZII", were predominantly gales from the northerly quadrant.

The following table indicates wind speed ranges and sea heights generally forecast for the period 0045, March 11 until 1730, March 14, 1987 for that area of the Atlantic Ocean.

Date	Gale warning	Wind range	Sea height-range
March 11	throughout period	N 10-45 kts	1-6 m
March 12	0045 only	N 15-30 kts	1-4 m
March 13	Issued 1530	N 15-45 kts	2-4 m
March 14	throughout period	N 15-45 kts	4-8 m

From this, it can be seen that during the time the "KOMSOMOLETS KIRGIZII" was at anchor, a low pressure system passed through the area. Shortly after the vessel sailed, a second low pressure system moved to the southeast of Nova Scotia whilst a high pressure area predominated over New Brunswick and the northeastern United States. As a result of the two systems the "KOMSOMOLETS KIRGIZII" would have experienced strong to gale force north-easterly winds.

Marine weather forecasts issued by the National Weather

Service Forecast office at Boston, Massachusetts for the same periods, covered the areas which were forecast by Environment Canada and areas to the south as far as Nantucket Islands and east as far as 60° W longitude. These forecasts indicated similar conditions as those forecast by Environment Canada and such conditions also prevailed in the more southern and eastern waters.

Findings

Acknowledging that it was not possible to interview the crew, it would appear that:

- the loading of the bagged flour in Halifax was in all respects normal, typical of many years of safe export from the port, and achieved with the minimum of broken stowage; and

- the vessel left her anchorage in Halifax with an approximate 2° port list and within her stated permissible maximum draught for Winter North Atlantic.

OTTAWA, ONTARIO
AUGUST 1987.

Glossary

Auto Alarm SOS	An automatic wireless telegraphy distress signal consisting of a series of 12 long dashes each of 4 seconds duration with one second silence between each dash. The signal activates auto alarms at other stations within the area
Freeboard	The vertical distance measured on the vessel's side amidships from the waterline to the upper side of the uppermost continuous deck
GM	The vertical distance between the centre of gravity and the transverse metacentre (in this case)
kHz	kilohertz
metacentre	The point of intersection of the vertical through the centre of buoyancy of a ship in the upright position, with the vertical through the new centre of buoyancy when the ship is slightly inclined
USCG RS	United States Coast Guard..... Radio Station
VTS	Vessel Traffic System

NOM DU NAVIRE S.S./MV KOMSOMOLETS KIRGIZII PORT DE PORT HALIFAX PIER 20-21 MARCH 87

PORT EN LOURD - DEADWEIGHT TONS

CARGAISON CARGO 10292 M/TONS
FARDAGE ET BARDIS DUNNAGE & FITTINGS
SOUTES BUNKERS 780 " "
EAU WATER 260 " "
APPROVISIONNEMENT, ETC. STORES, ETC., 250 "

PLAN D'ARRIMAGE - STOWAGE PLAN

5	4	3	2	1
4152 BAGS DURUM FLOUR 189 M/TONS 6414 BAGS BAKERS PATENT FLOUR 410 M/TON	11860 BAGS BAKERS PATENT FLOUR 758 M/TON	1522 BAGS BAKERS PATENT FLOUR 97 M/T 18373 BAGS BISCUIT FLOUR 1174 M/TONS	11857 BAGS BISCUIT FLOUR 758 M/TON	11675 BAGS BAKERS PATENT FLOUR 746 M/TON
10994 BAGS DURUM FLOUR 501 M/T.	21377 BAGS BAKERS PATENT FLOUR 1366 M/TONS	37142 BAGS BAKERS PATENT FLOUR 2373 M/TONS	17017 BAGS BISCUIT FLOUR 1087 M/TONS	8101 BAGS BAKERS PATENT FLOUR 518 M/TON
6901 BAGS DURUM FLOUR 315 M/TONS				

TIRANT D'EAU ARRIÈRE - DRAFT AFT 9.30 TIRANT D'EAU MOYEN - MEAN DRAFT 9.00 TIRANT D'EAU AVANT - DRAFT FWD 8.70

CARGAISON EMBARQUÉE - CARGO LOADED:-

22047 BAGS DURUM FLOUR 1005 M/TONS
47247 BAGS BISCUIT FLOUR 3019 M/TONS
98091 BAGS BAKERS FLOUR 6268 M/TONS
10292 M/TONS

SECOND CHIEF OFFICER

Mobile - forme 201

ENVIRONMENT CANADA

EAST COAST

MARINE WEATHER FORECAST AREAS

POSITION OF CASUALTY

LIEU DU SINISTRE

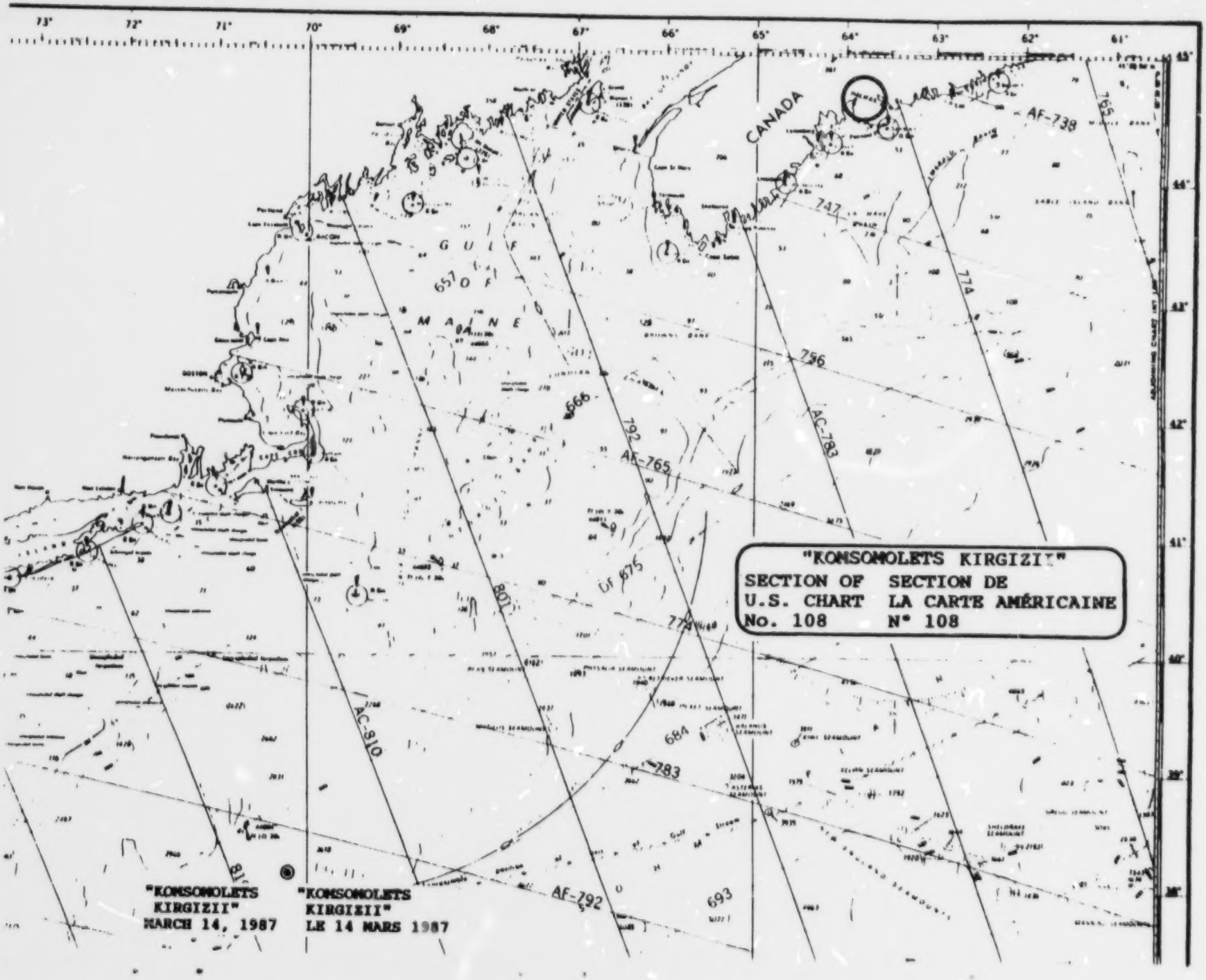
"KOMSOMOLETS KIRGIZII"
SECTION OF U.S. CHART No. 108
SECTION DE LA CARTE AMÉRICAINE N° 108
"KOMSOMOLETS KIRGIZII" MARCH 14, 1987
"KOMSOMOLETS KIRGIZII" LE 14 MARS 1987
CANADA
GULF OF MAINE
AF-738
AC-783
AF-765
AC-910
AF-792

Photo courtesy of U.S. Coast Guard

Photographie: Garde Côtière Américaine

"KOMSOMOLETS KIRGIZII" in Atlantic Ocean prior to sinking.
"KOMSOMOLETS KIRGIZII" dans l'Océan Atlantique avant de couler.